5: Roth E-4 (no date) 1892 OC6 Iban OC6

Tubai fishing.—But the favourite form of fishing whether on a large or on a small scale is with the *tubai* root (*menispernum*) the juice of which is baled into the stream to poison its waters and to cause the fish to rise stupefied to the surface. The *empang*, or basket work screens, are first erected at the mouth of the river to prevent the escape of the fish into pure water. Each person brings his own *tubai*—a bundle or two. A *karangan* is selected where suitable stones abound. It must be two or three hours' pull from the entrance or the sport would be over too soon. The canoes line either bank, and at a given signal the entire *bala*, *i.e.*, party, commence to hammer out the root and soak it in the water in the bottom of their boats. A few minutes later when all hands are ready the poisoned liquid is baled out into the stream, and the canoes after a short pause begin to drift slowly down the current, and as the fish rise to the surface, they are speared with fish-fork or captured with hand-nets. The best of the fun is over in an hour or two, but many remain, nevertheless, until late in the evening to watch for a fresh rise. The women join in the sport and scoop up the small fry with their nets. It is forbidden by custom to hurl the spear at the fish; any accident arising from an infraction of this rule is punishable by fine.

7. *Navigation.*

The canoes are hollowed out of a single log by means of fire and the use of the adze. The natives have no measure to ensure accuracy, but are entirely guided by the eye. Generally the canoe shows traces of the fire and water treatment it has received, the inner surface being soft and full of superficial cracks, while the outer surface is hard and close. When the shell has been sufficiently opened out, thwarts are inserted to prevent its shrinking as the wood dries. Planks or gunwales are stitched on to the sides to increase its volume, the seams being caulked with sago stems which are light and porous, and swell when wet and so keep out the water. Each of these side pieces is formed of an entire plank about 12 inches deep and about 1½ inches thick, laced on to the body of the canoe by flaxen cords and united to its opposite plank by the thwarts. The largest canoes have the sides made still higher by means of a narrow plank laced on to the first gunwale, and the seam again caulked. The canoe is alike at both ends, the stem and stern being both pointed, curved, and rising out of the water. There is no keel, and the canoe draws little water. There are no ribs nor is there any figure head.

To make a bark canoe the native simply goes to the nearest

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396 stringy bark tree, chops a circle round it at its base, and another circle 7 or 8 feet from the ground; he then makes a longitudinal cut on each side, and strips off as much bark as is required. The ends are sewn up carefully and daubed up with clay, the sides being kept in position by cross-pieces.' The steering is performed with one or two greatly developed fixed paddles.

8. *Weapons and War-dress.*

411 The *slighi* is a wooden lance, the point of which is hardened in the fire. It is used as a missile and is hurled at the enemy. It is usually of ironwood (*bilian*), but palmwood javelin, especially *inbery* is also used. They are showered upon the enemy at the commencement of an engagement before the parties are close enough to use the spear, which never, or rarely leaves the hand.

Dart stems are made of the palm called *apieng*. The poisonous juice of *tasam* tree is used for their darts; it is dried over the fire until it becomes a hard paste, and is then softened with the juice of an *akar*, creeper.

The *sangkoh* is a long wooden shaft with a steel spear head. The shaft is usually of ironwood, with a spud of bone at its butt end. If it has no spud it is pointed so that it can be stuck into the ground. It is always held towards the point, rather than by the centre and over the right shoulder, the butt end up in the air, and the point towards the ground. The blade is of steel, and is 12 inches in length, and broad towards the point; the tang is not inserted in a slit in the wood, but is bound on to the stem with cane or brass wire, and is very firm. The spear is used at close quarters to thrust with, and is held in the right hand—the shield occupying the left. The shaft is occasionally carved, but more often plain. I have one in my collection with six or seven brass rings, indicating the number of warpaths made by its owner.

411 The *dukn, or parang pedang,* is the scimitar so much worn by
171 the Malays, and differs only from it in being thicker and heavier. It is formed after the pattern of a German cavalry sabre, and has a cross-handle of brass. The blade is two-edged at the point, so that it can be used for thrusting as well as cutting. The sheath is of some light wood, and is stained crimson with dragon's blood. The Undeys and Balaus in particular have their sheaths covered with silver work, and the hilt with silver. The hollow of the hilt is decorated with human hair, and the edge of the sheath is adorned with a row of the wing feathers of the hornbill. The Malays wear the sword with the edge upwards but the Dyaks wear it with the edge outwards.

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be regarded as foreboding evil, and the house would have to be abandoned and a new house built.

All the men combine to labour collectively until the skeleton of the house is complete, and then every family turns its attention to its own apartments. During the building of the house, there is a great deal of striking of gongs and other noisy instruments to prevent any birds of ill omen being heard. I have sometimes argued with the Dyaks that if the warnings of the birds are to be trusted, then why make so much noise to prevent hearing them? The Dyak's reply to this was that as long as they did not hear the warning, the spirits would not be displeased at their not regarding it; so to spare themselves the trouble of choosing another site and building another house, they make so much noise as to drown the cries of any birds.

When the building is sufficiently advanced to receive the inmates, they pack up their possessions and convey them to the house, halting on the way till they have heard some favourable omen, after which they proceed joyfully. Their belongings must not be moved into the house before themselves, but must be taken with them when they move into the new house.

House-building is considered the work of the men, and another important work the men have to do is the making of boats. These are of all sizes, from the dug-out canoe twelve feet long to the long war-boat eighty to ninety feet in length.

The ordinary boats of the Dyaks are cut out of a single log. Some of my schoolboys, under the guidance of the native schoolmaster, once made a small canoe for their own use, so I saw the whole process. A tree having a round straight stem was felled, and the desired length of trunk cut off. The outside was then shaped with the

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396 adze to take the desired form of a canoe. Then the inside was hollowed out. The next thing to do was to widen the inside of this canoe. This was done by filling the boat with water and making a fire under it, and by fastening weights to each side. When the shell had been sufficiently opened out, thwarts were placed inside, about two feet from each other, to prevent the wood shrinking when the wood dried. The stem and stern of the canoe are alike, both being pointed and curved, and rising out of the water. The only tool used for the making of a boat of this kind is the Dyak axe or adze (*bliong*).

This is the usual type of Dyak boat, and the method of making a smaller or larger canoe is exactly the same. Even a war-boat, ninety feet long, is made from the trunk of one tree. In the longer boats planks or gunwales are stitched on the sides, and the seams are caulked so as to render the boat watertight. These boats are covered with awnings called *kadjangs*, which make a very good covering, as they are at once watertight, very light, easily adjusted, and so flexible that if necessary each section can be rolled up and stored in the bottom of the boat. These *kadjangs* [824] are made of the young leaves of the *nipa* palm. The leaves are sewn together with split cane, each alternate leaf overlapping its neighbour on either side, until a piece about six and a half feet square is made. This section is made to bend in the middle crosswise, so that it can be doubled and rolled up, or partly opened, and made to serve as a roof. Sometimes *kadjangs* are made from the leaves of the Pandanus palm.

501 To propel these boats the Dyaks use paddles about three feet or more in length. The paddle used by the steersman is larger than those used by the others, and the women use much smaller paddles than the men. These

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SEA DYAKS MAKING A CANOE

Sea Dyaks at work on a small dug-out. The tree has been felled, and the trunk is being cut into shape and hollowed out. The Dyaks are using the native axe or *bliong*, and the picture shows their method of handling it.

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fixed paddles, which the steersman works with his foot if he happens to be standing up.

Sometimes the war-boat is built of planks in the following manner. First they make a long *lunas*, or keel plank, of hard wood the whole length of the boat. This has two ledges on each side on its upper surface, each about an inch from the edge of the keel. Then several planks are made, all of which are also the entire length of the boat. Each plank has an inside ledge on its upper edge, its lower edge being quite plain. When the Dyaks have made as many planks as are necessary, they put them together in the following manner. The keel plank is put in position, then the first side-planks are brought and placed with their lower or plain edges upon the two ledges of the keel planks. The ledge of the first side-plank receives in turn the next plank, and so on, till they have enough planks, generally four or five, on each side. The ledges and the planks next to them are bored, and firm rattan lashings are passed from one to the other. The seams are caulked up so as to render the boat watertight. In the construction of a boat of this kind no nails or bolts are employed—nothing but planks ingeniously fastened together with cane or rattan. These lashings are not very durable, as the rattans soon get rotten. But this is of little consequence, as the boat is only used for war expeditions, and on her return the lashings are cut, and the separated planks are stored in the Dyak house. When she is again required, the planks are got out and the boat reconstructed as before.

This kind of war-boat is not often seen nowadays. It is clumsy, and does not travel very fast. In the whole of my experience I have only seen one boat of this kind in course of construction.